



COR-0993

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14 November 1960

NRO REVIEW COMPLETED

MEMORANDUM FOR : Deputy Director (Plans)  
THROUGH : Acting Chief, DPD-DD/P  
SUBJECT : Convair E-6 Proposal

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1. [ ] sent me a copy of the Convair Fort Worth proposal on E-6. From the number and thickness of the several brochures making it up, they have invested a considerable effort in preparing the proposal.

2. As you are aware, among the E-6 requirements are:

- (a) 10 foot ground resolution
- (b) overland recovery
- (c) five days operation
- (d) one mile accuracy
- (e) stereo highly desired

3. The Convair proposal is based on the Atlas-Agena and is unusual in the following ways:

- (a) six Discoverer recovery capsules are attached in a revolver like array to provide one recovered film load after each of six operational days. This requires development of an automatic film splicing technique.
- (b) greatly increased recovery accuracy over Discoverer by use of a Cyclops C (modified Azusa) tracking station [ ] resulting in a calculated impact CEP of about  $3\frac{1}{2}$  miles or better than 10 times the accuracy of Discoverer. To achieve this degree of accuracy and to match the increased capsule payload weight, a higher thrust retro rocket must be developed.

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- (c) overall system positional accuracies of 2,000 to 6,000 feet (depending on mapping errors) using orbital reconstruction techniques similar to ARGON. This may well be more desirable in the overall intelligence-mapping sense than any major expansion of the ARGON program.

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5. Convair have discussed payloads with EK, P & E, ITEX, and Hycon. Their basic proposal uses an EK dual camera arrangement to give 100 per cent stereo. The claimed ground resolution is  $8\frac{1}{2}$  feet from a 130 mile altitude using a 36" focal length, f4 lens. Lateral coverage is 182 miles.

An alternate system with a single P & E camera is proposed to give 8 foot ground resolution from the same orbital altitude. This camera includes a 24" focal length, f3.8 lens and has a 260 mile lateral coverage. Although it is claimed that stereo could be obtained with this variant simply by including a second camera, this may require other system changes. The on orbit weight with the EK cameras is 4,125 pounds and with the single P & E camera ~~the weight is 4,530 pounds~~ full film load would add at least 730 more pounds. This 4,530 pounds is probably unrealistically low for a dual installation and is only 200 pounds below the advertised Atlas-Agena B orbital weight.

Convair are quite enthusiastic over another variant using a modified E-5 camera by ITEX. This enthusiasm stems from their belief that higher resolution by a factor of two is preferable to full stereo. This view is not held by PIC. The E-5 modification is increase in scan angle from 20 degrees to 70 degrees resulting in 250 miles lateral coverage from 180 miles altitude. In other respects the E-5 configuration 66" focal length, f5 is held. A dual installation to produce full stereo might be accomplished in 1963 when the Centaur could replace Agena B.

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6. Convair's estimated costs are [redacted] for the recovery tracking station. Their launch schedule begins in August of 1961 with four engineering tests ending in December and seven operational shots between January and September of 1962.

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